INCH-POUND
MIL-M-38510/657
AMENDMENT 7
23 May 2000
SUPERSEDING
MIL-M-38510/657
AMENDMENT 6
17 March 1998

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, HIGH SPEED, CMOS,
BUFFER GATES, MONOLITHIC SILICON

Inactive for new design after 9 August 1996

This amendment forms a part of MIL-M-38510/657, dated 30 September 1986,
and is approved for use by all Departments and Agencies of the Department of Defense

PAGE 1

*1.2.3 Case outlines: Delete in its entirety and substitute with the following:

Outline letter	Package descriptive designator (see MIL-STD-1835)
C	GDIP1-T14 or CDIP2-T14, 14-lead dual-in-line package
E	GDIP1-T16 or CDIP2-T16, 16-lead dual-in-line package
R	GDIP1-T20 or CDIP2-T20, 20-lead dual-in-line package
D	GDIP1-F14 or CDIP2-F14, 14-lead flat package
F	GDIP2-F16 or CDIP3-F16, 16-lead flat package
S	GDIP2-F20 or CDIP3-F20, 20-lead flat package
X	See figure 5
2	CQCC1-N20, 20 terminal leadless chip carrier package

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*3.2.4 Delete and substitute as; "Case outlines. The case outlines shall be as specified in 1.2.3 and as specified on figure 5."

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TABLE I, Additional supply current quiescent per input pin: delete in its entirety and substitute as follows:

"

Additional supply current quiescent per input pin (one unit load)	$I_{CC\Delta}$ 7/	For all inputs, V_{IL} = 0.4 V and V_{IH} = 2.4 V, Test pin at V_{IN} = 2.4 V, When not being tested, control pins at $V_{IH} = V_{CC}$ and V_{IL} = GND, I_O = 0 µA	52,54	5.5 V		1.50	mA
			51,53, 55,60, 61			3.0	

"

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TABLE I, Output enable time, device types 06, 07, 08, 09, 60 and 61: delete in its entirety and substitute as follows:

"

Output enable time 5/ 6/	t_{PZH}	C_L = 50 pF minimum R_L = 1 kΩ ±10%	06,07	4.5 V	5	51	ns
			08,09	4.5 V	5	44	ns
			60,61	4.5 V	7	53	ns
	t_{PZL}		06,07	4.5 V	5	51	ns
			08,09	4.5 V	5	44	ns
			60,61	4.5 V	10	53	ns

"

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TABLE I, Transition: Delete in its entirety and substitute as follows:

"

Transition 5/ 6/	t_{THL} t_{TLH}	C_L = 50 pF ±10%	01,02	4.5 V	3	20	ns
			03,04, 06-11	4.5 V	2	16	ns
			05	4.5 V	1	16	ns
			51,52	4.5 V	3	20	ns
			53-55, 60,61	4.5 V	2	16	ns

"

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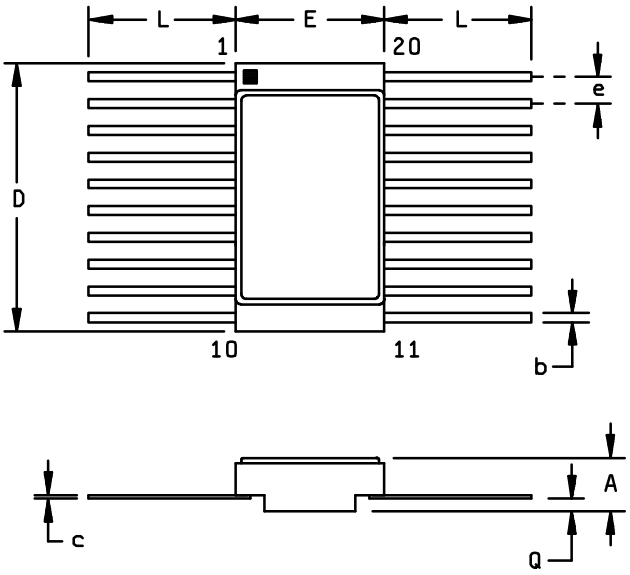
*Figure 1: Delete “Cases R and S” and substitute “Cases R, S, and X”.

*Add case outline X as FIGURE 5

"Device type 11

Case outline X



Device type 11, case outline X						
Symbol	Inches			Millimeters		
	Min	Nom	Max	Min	Nom	Max
A	.045		.085	1.14		2.16
b	.015		.019	0.38		0.48
c	.003		.006	0.076		0.152
D	.505		.515	12.83		13.08
E	.275		.285	6.99		7.24
e	0.045		0.055	1.14		1.40
L	.250		.370	6.35		9.39
Q	.010			0.25		
N	20			20		

FIGURE 5. Case outline X."

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TABLE III, device type 05, t_{TLH}, T_C = +25°C in the max limits column, delete "2" and substitute "1".
TABLE III, device type 05, t_{TLH}, T_C = +125°C in the max limits column, delete "2" and substitute "1".
TABLE III, device type 05, t_{TLH}, T_C = -55°C in the max limits column, delete "2" and substitute "1".

PAGES 71 THROUGH 75

*Table III: Delete "Cases 2 and R" and substitute "Cases R, S, X, and 2".

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TABLE III, device type 51, $I_{CC\Delta}$, test number 15: delete in its entirety and substitute as follows:

"

$I_{CC\Delta}$		215	2.4 V		0.4 V		0.4 V		GND		0.4 V		0.4 V		0.4 V	5.5 V	V_{CC}		3.0		3.0		3.0	mA
		216	0.4 V		2.4 V		"		"		"		"		"	"	"		"		"		"	"
		217	"		0.4 V		2.4 V		"		"		"		"	"	"		"		"		"	"
		218	"		"		0.4 V		"		2.4 V		"		"	"	"		"		"		"	"
		219	"		"		"		"		0.4 V		2.4 V		"	"	"		"		"		"	"
		220	"		"		"		"		"		0.4 V		2.4 V	"	"		"		"		"	"

"

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TABLE III, device type 53, $I_{CC\Delta}$, test numbers 23 and 24: delete in its entirety and substitute as follows:

"

ICCΔ		223	2.4 V	0.4 V		0.4 V		0.4 V		0.4 V		GND	0.4 V		0.4 V		0.4 V		0.4 V		GND	5.5 V	VCC		3.0		3.0		3.0	mA
		224	GND	2.4 V		"		"		"		"	"		"		"		"		"	"	"		"		"		"	"
		225	"	0.4 V		2.4 V		"		"		"	"		"		"		"		"	"	"		"		"		"	"
		226	"	"		0.4 V		2.4 V		"		"	"		"		"		"		"	"	"		"		"		"	"
		227	"	"		"		0.4 V		2.4 V		"	"		"		"		"		"	"	"		"		"		"	"
		228	"	'		"		"		0.4 V		"	2.4 V		"		"		"		"	"	"		"		"		"	"
		229	"	"		"		"		"		"	0.4 V		2.4 V		"		"		"	"	"		"		"		"	"
		230	"	"		"		"		"		"	"		0.4 V		2.4 V		"		"	"	"		"		"		'	"
		231	"	"		"		"		"		"	"		"		0.4 V		2.4 V		"	"	"		"		"		"	"
		232	"	"		"		"		"		"	"		"		"		0.4 V		2.4 V	"	"		"		"		"	"

"

TABLE III, device type 55, $I_{CC\Delta}$, test number 23 and 24: delete in its entirety and substitute as follows:

"

ICCΔ		223	2.4 V	0.4 V		0.4 V		0.4 V		0.4 V		GND	0.4 V		0.4 V		0.4 V		0.4 V		GND	5.5 V	VCC		3.0		3.0		3.0	mA
		224	GND	2.4 V		"		"		"		"	"		"		"		"		"	"	"		"		"		"	"
		225	"	0.4 V		2.4 V		"		"		"	"		"		"		"		"	"	"		"		"		"	"
		226	"	"		0.4 V		2.4 V		"		"	"		"		"		"		"	"	"		"		"		"	"
		227	"	"		"		0.4 V		2.4 V		"	"		"		"		"		"	"	"		"		"		"	"
		228	"	'		"		"		0.4 V		"	2.4 V		"		"		"		"	"	"		"		"		"	"
		229	"	"		"		"		"		"	0.4 V		2.4 V		"		"		"	"	"		"		"		"	"
		230	"	"		"		"		"		"	"		0.4 V		2.4 V		"		"	"	"		"		"		'	"
		231	"	"		"		"		"		"	"		"		0.4 V		2.4 V		"	"	"		"		"		"	"
		232	"	"		"		"		"		"	"		"		"		0.4 V		2.4 V	"	"		"		"		"	"

"

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TABLE III, device type 60, $I_{CC\Delta}$, test number 23 and 24: delete in its entirety and substitute as follows:

"

ICCΔ		223	2.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	GND								GND	5.5 V	VCC		3.0		3.0		3.0	mA
		224	GND	2.4 V	"	"	"	"	"	"	"	"								"	"	"		"		"		"	"
		225	"	0.4 V	2.4 V	"	"	"	"	"	"	"								"	"	"		"		"		"	"
		226	"	"	0.4 V	2.4 V	"	"	"	"	"	"								"	"	"		"		"		"	"
		227	"	"	"	0.4 V	2.4 V	"	"	"	"	"								"	"	"		"		"		"	"
		228	"	'	"	"	0.4 V	2.4 V	"	"	"	"								"	"	"		"		"		"	"
		229	"	"	"	"	"	0.4 V	2.4 V	"	"	"								"	"	"		"		"		"	"
		230	"	"	"	"	"	"	0.4 V	2.4 V	"	"								"	"	"		"		"		'	"
		231	"	"	"	"	"	"	"	0.4 V	2.4 V	"								"	"	"		"		"		"	"
		232	"	"	"	"	"	"	"	"	0.4 V	"								2.4 V	"	"		"		"		"	"

"

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TABLE III, device type 60, t_{PZH}, test number 133, test limits, T_C = -55°C, min limits column, change from """" to "7".

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TABLE III, device type 60, t_{PZH}, test number 141, test limits, T_C = -55°C, min limits column, change from "10" to "7".

TABLE III, device type 61, $I_{CC\Delta}$, test number 23 and 24: delete in its entirety and substitute as follows:

"

ICCΔ		223	2.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	GND								GND	5.5 V	VCC		3.0		3.0		3.0	mA
		224	GND	2.4 V	"	"	"	"	"	"	"	"								"	"	"		"		"		"	"
		225	"	0.4 V	2.4 V	"	"	"	"	"	"	"								"	"	"		"		"		"	"
		226	"	"	0.4 V	2.4 V	"	"	"	"	"	"								"	"	"		"		"		"	"
		227	"	"	"	0.4 V	2.4 V	"	"	"	"	"								"	"	"		"		"		"	"
		228	"	'	"	"	0.4 V	2.4 V	"	"	"	"								"	"	"		"		"		"	"
		229	"	"	"	"	"	0.4 V	2.4 V	"	"	"								"	"	"		"		"		"	"
		230	"	"	"	"	"	"	0.4 V	2.4 V	"	"								"	"	"		"		"		'	"
		231	"	"	"	"	"	"	"	0.4 V	2.4 V	"								"	"	"		"		"		"	"
		232	"	"	"	"	"	"	"	"	0.4 V	"								2.4 V	"	"		"		"		"	"

"

TABLE III, device type 61, t_{PZH}, test number 133, test limits, T_C = -55°C, min limits column, change from """" to "7".

TABLE III, device type 61, t_{PZH}, test number 141, test limits, T_C = -55°C, min limits column, change from "10" to "7".

NOTE: The margins of this amendment are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA-CC

Preparing activity:
DLA - CC

Review activities:
Army - AR, MI, SM
Air Force - 19, 99
Navy - AS, CG, MC, SH

(Project 5962-1869)